Implementing California's Performance Standards: The Development of Treatment Technology Testing Guidelines and Compliance Verification Protocols

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Coastal Ecosystems Protection Act

- Signed by Governor October 2006
- Required implementation of performance standards for the discharge of ballast water
- Required report assessing efficacy, availability and environmental impacts, including water quality, of currently available ballast water treatment technologies

Performance Standards

Organism Size Class	California	IMO Regulation D-2
Organisms greater than 50 µm in minimum dimension	No detectable living organisms	< 10 viable organisms per cubic meter
Organisms 10 – 50 µm in minimum dimension	< 0.01 living organisms per ml	< 10 viable organisms per ml
Organisms less than 10 µm in minimum dimension	< 10^3 bacteria/100 ml < 10^4 viruses/100 ml	
Escherichia coli	< 126 cfu/100 ml	< 250 cfu/100 ml
Intestinal enterococci	< 33 cfu/100 ml	< 100 cfu/100 ml
Toxicogenic *Vibrio cholerae* (O1 & O139)	< 1cfu/100 ml or < 1cfu/gram wet weight zoological samples	< 1 cfu/100 ml or < 1 cfu/gram wet weight zooplankton samples

Ballast Water Capacity of Vessel	Standards apply to new vessels in this size class constructed on or after	Standards apply to all other vessels in this size class beginning in
< 1500 metric tons	2009	2016
1500 – 5000 metric tons	2009	2014
> 5000 metric tons	2012	2016

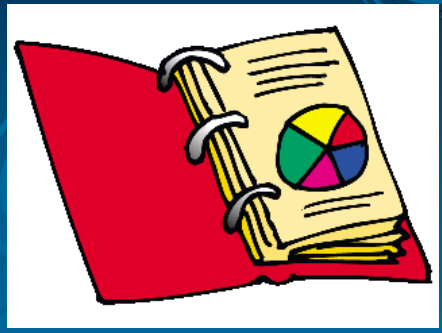
FINAL DISCHARGE STANDARD: Zero detectable living organisms by January 2020

Performance Standards Regulations

- Standards prescribed by statute, implemented via regulations
- Comments/objections from industry focused on lack of state/federal/international consistency
- Approved October 2007
- Initial implementation date January 1, 2009
- Text of regulations available on CSLC website

Technology Assessment Report

- Assessment of available treatment systems to meet CA's performance standards
- Key components:
  - Efficacy
  - Availability
  - Environmental impacts, including water quality
- If technologies to meet the standards are unavailable – why not?
- Approved by Commission on December 3, 2007
- Provided to Legislature January 1, 2008
- Similar reports due 18 months prior to each implementation date



Report Findings

- 28 treatment technologies reviewed
- *Efficacy* - No single technology has yet demonstrated capability to meet more than four (out of 7) of California's performance standards
- *Availability* – Many systems commercially available by 2009, but unless they meet the standards not available for use in California
- *Environmental Impacts* - 21 of 28 systems use biocide/active substance and will require toxicological testing and analysis. Working with State Water Board to ID applicable water quality regulations/objectives.

Conclusions

- Systems require further development and testing, particularly at shipboard scale
- Lack of standardized testing procedures makes evaluation of systems difficult
- Commission staff will continue to gather information on and support research addressing technology development and system evaluation
- Systems will meet CA standards in near future

Recommendations to the Legislature

- Change initial implementation date for new vessels with a ballast water capacity less than 5000 metric tons from 2009 to 2010
  - Senate Bill 1781
- Require updated technology assessment report by January 1, 2009
  - In progress
- Authorize the Commission to amend reporting requirements via regulations to include details about treatment technology use
  - Assembly Bill 169
- Support continued research promoting technology development

Implementing California's Performance Standards

- The Commission will <u>not</u> be approving ballast water treatment systems for use in California waters
- Commission will focus on dockside inspection of vessels to verify compliance with performance standards

Next Steps

- Treatment technology testing and evaluation guidelines
- Inspection protocols for verification of vessel compliance with performance standards
- Ballast water sampling regulations

Ballast Water Treatment Technology Testing Guidelines

- Response to technology assessment report – lack of standardized methods for system verification and data presented in metrics inconsistent with California's standards
- Intended to bridge the gap between treatment system development and operation in California waters
- Standardized protocol to verify treatment system compliance with California's ballast water performance standards and water quality objectives
- Developed in consultation with panel of scientific experts and State Water Resources Control Board
- Staff highly recommends vendors consult guidelines before and during system performance verification
- Will be distributed to industry later this month

Goals of Guidelines

- Encourage dialogue about system performance verification testing between treatment vendors and regulatory agencies
- Recommends production of verification report - valuable information and data addressing treatment system performance and environmental safety for:
  - Regulatory agencies – gather information about what systems may be used in CA waters and how they work
  - Customers (vessel owners/operators) who will need to purchase systems to comply with CA standards

Description of Guidelines

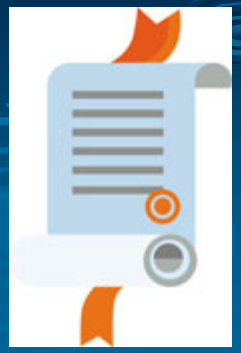
- U.S. EPA's Environmental Technology Verification (ETV) program – "Generic protocol for the verification of ballast water treatment technologies"
  - Partnership with USCG
  - Includes test plan development, experimental design, data collection and analysis, verification reporting
- Recommended methods for sample analysis to assess compliance with CA's performance standards
- Water Quality and Toxicity Evaluation
  - Draws from California Ocean Plan
  - Summarizes key points for vendors and vessels

Compliance Verification Protocols

- Methods for use by Commission Marine Safety Inspectors to verify vessel compliance with performance standards
- Combination of administrative inspection (BW reporting form, technology addendum) and BW sample collection and analysis
- Will be developed in consultation with panel of scientific experts
- To be finalized in 2009 prior to standards implementation in 2010

Ballast Water Sampling Regulations

- Authority to sample ballast water under PRC Section 71206
- Need regulations to clarify location and equipment for sample collection to assess compliance with performance standards for the discharge of ballast water
- Proposed regulations based on draft IMO G2 “Ballast Water Sampling” Guidelines and proposed ETV protocols
- Implementation in conjunction with performance standards
- Expect to complete rulemaking in mid-2009



Questions?

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Photo courtesy of the Smithsonian Environmental Research Center